



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/507,379

03/18/2005

Jari Ylitalo

108306-00025

2097

4372

7590

10/02/2006

ARENT FOX PLLC

1050 CONNECTICUT AVENUE, N.W.

SUITE 400

WASHINGTON, DC 20036

EXAMINER

IP, SHIK LUEN PAUL

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/507,379		YLITALO, JARI	
	Examiner		Art Unit	
	Paul Ip		2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-15,17,18,20,21 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-15,17,18,20,21 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to because figures 1-3 should be labeled "Prior Art". Corrected drawing sheets in compliance with 37 CFR 1.121 (d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121 (d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

3. The information disclosure statements (IDS) submitted on 9/21/2004 and 3/18/2005 comply with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-7, 9-15, 23, 24, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kilgore (4,338,525) in view of Schmucker et al (4,024,443) or Frisch (2,451,936).

7. With respect to claims 1-7, 9-15, 23, 24, 29, and 30, the patent to Kilgore discloses a marine propulsion system comprising a propeller 24, a propeller synchronous motor 16 including stator windings, an electrical power network (10, 12, 14, 28), a frequency converter 22, and a switch arrangement (18, 20, 44) for

disconnecting the propeller motor (switch 18) and for, short circuiting or dynamic braking (switches 20 and 44 closed), the stator windings (switches 20 and 44) of the propeller motor. See column 7 line 31 to column 8 line 32 for the short circuiting or dynamic braking of the motor. Whereas, the claims recite "a switching arrangement disconnecting the propeller motor from the electrical power network and for short-circuiting the stator windings of the propeller motor". However, the patent to Schmucker et al discloses at column 6 under DYNAMIC BRAKING that:

DYNAMIC BRAKING

If it is required to stop the A.C. motor which is driving a load with a high inertia, the A.C. motor may be dynamically braked by first disconnecting the position sensor from the phase-commutation thyristor bank and applying off signals to all of the thyristors causing them to become inactive within one-half A.C. generator voltage cycle, cutting the prime mover throttle to prevent prime mover overspeed resulting from loss of load as the load as the thyristors are signaled off, disconnecting the A.C. generator while at zero current and inserting a properly $2 \times n$ -phase resistor load, actuating a switch which applies on gate signals to all thyristors, permitting the A.C. motor to deliver power to the resistive load. The value of the resistance and the A.C. motor field strength may be altered to maintain the current close to the rating of the thyristors.

Schmucker et al teach and suggest disconnecting (inactive) the propeller motor from the electrical power network.

The patent to Frisch shows in figure 3 the motor switches off when the dynamic braking switches are connected to the resistors.

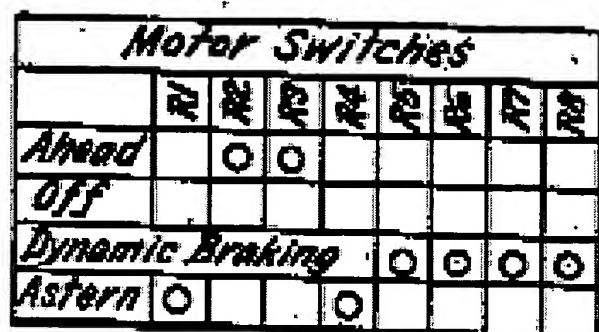


Fig. 3.

Kilgore does not clearly specify disconnect the electrical power network. However, the patents to Schmucker et al and Frisch disclose disconnect the electrical power network during dynamic braking and before reverse the motor direction. Prima facie case is made that Kilgore disclosed the switch 20 can be closed with frequency converter 22 set to output a frequency equivalent to that of the generator and the generator 12 can then be electrically disconnected from the motor 16 by opening switch 18. When performing the dynamic braking of a motor, one of ordinary skill in the art would disconnect the motor from the electrical power network in order to prevent the electrical power network damage during the dynamic braking. One of ordinary skill in the art would disconnect Kilgore's electrical power network from the motor as taught or suggested by Schmucker et al or Frisch to prevent the damage of the electrical power network during the dynamic braking.

8. Claims 17, 18, 20, 21, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kilgore (4,338,525) in view of Schmucker et al (4,024,443) or Frisch (2,451,936) taken with Johnson et al (3,812,411).

9. Claims 17, 18, 20, 21, and 25-28 further recite detecting absence of electrical supply power to the propeller motor. However, the patent to Johnson et al discloses a dynamic braking control for a ship motor driving a propeller comprising a shunt 20 for detecting the electrical supply power to the propeller motor 9 and a current detector 15 connects to a zero cross detector 17 for detecting the electrical supply power to the propeller motor 9. Prima facie case is made that Kilgore, Schmucker et al or Frisch, and Johnson et al are dynamic braking systems for controlling a motor driving a propeller used under the same environment for ship propulsion systems. In order to prevent any damages to the electrical supply power network and the dynamic braking resistors, it would have been obvious to one of ordinary skill in the art to provide a current detector to detect the motor current disconnected before the connection of the dynamic braking resistors. It would have been obvious to one of ordinary skill in the art to provide Kilgore with the current detector as taught or suggested by Johnson et al to prevent the electrical supply power network damage or the dynamic braking resistors damage.

Response to Amendment

10. Applicant's arguments filed on 9/16/2006 have been fully considered but they are not persuasive.

Applicant's arguments have been considered. The only argument is Kilgore's electric motor never disconnected from the electrical power network. Applicant's argument is not persuasive. Even though Kilgore does not clearly specify whether the electric motor is disconnected from the electrical power network or not, one of ordinary

Art Unit: 2837

skill in the art would understand that it is necessary to disconnect the motor from the electrical power network in order to prevent the electrical power network damage or the dynamic braking resistors damage. The patents to Schmucker et al and Frisch provide a clear support for the examiner's position. Applicant should realize that the dynamic braking apparatus and method of the invention is notorious old in the art. Furthermore, applicant should realize that the dynamic braking apparatus and method of the invention without the reverse function of the motor and propeller fail to provide the stop function of the ship. The claims are not patentable over the references of the record.

Communication Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941.

The examiner can normally be reached on Monday to Friday from 6:30 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan, can be reached on (571)-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Internet correspondence **MUST** be provided with a prior written authorization by applicant in the application file record giving the Office authorization to communicate with applicant via e-mail. Without a written authorization by applicant in place, the USPTO will not respond via Internet e-mail to any Internet correspondence which contains information subject to the confidentiality requirement as set forth in 35 U.S.C.

122.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Ip
Primary Examiner
Art Unit 2837

9/25/2006